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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,370	09/30/2003	Xiaowei Yao	30320/15636	5196

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EXAMINER
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MALSAWMA, LALRINFAMKIM HMAR

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/674,370

Applicant(s)

YAO ET AL.

Examiner

Lex Malsawma

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-13, 22 and 30 is/are rejected.
- 7) ☒ Claim(s) 14-19 and 23-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/20/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 10-30 in the reply filed on November 26, 2004 is acknowledged.

2. Claims 1-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on November 26, 2005.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (US 2002/0140085 A1; hereinafter "**Lee**").

#### *Regarding Claims 10 and 11:*

Lee discloses (in Fig. 3A) a circuit package comprising:

a base portion 311 (i.e., a substrate) having a first surface (e.g., the bottom surface of portion "311" as view on the page), a second surface (e.g., the top surface of portion "311"), a

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first via (e.g., one via through the thin portion of “311”), a second via 313, and a plurality of pins 321;

a first metal pattern 312b disposed on the first surface;

a second metal pattern disposed on the second surface (e.g., metal patterns on top of the thin portion of “311”), the second metal pattern being electrically coupled to the first via; and

a third metal pattern 312a disposed on the second surface and arranged to form a gap 311a (i.e., a recess) to electrically isolate the second metal pattern from the third metal pattern, the third metal pattern 312a being electrically coupled to the first metal pattern 312b through the second via. Therefore, these claims are anticipated.

5. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Steele et al. (US 6,780,672 B2; hereinafter “**Steele**”).

*Regarding claim 22:*

Steele discloses (in Figs. 4-6) a circuit package comprising:

a substrate 300d (Fig. 5) having a plurality of pins 560, a top surface, a bottom surface, a first via 607 (Fig. 6), a second via 612 (Fig. 6) and an opening (for the “cold finger” 520, i.e., the heat sink, note Fig. 6); and

a single heat sink 520 having a top surface and a bottom surface, the heat sink positioned within the opening such that the top surface is exposed through the top surface of the substrate and the bottom surface is exposed through the bottom surface of the substrate (note in Fig. 4, the “vertical cooling channel” 420 for the cold finger extends through all the substrates). Therefore, this claim is anticipated.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 12 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** (US 2002/0140085 A1) in view of **Koste et al.** (3,956,052; hereinafter, **Koste**).

*Regarding claims 12 and 13:*

Lee anticipates the circuit package of claim 1 but **lacks** specifically disclosing the base portion comprising ceramic or alumina. **Koste teaches** incorporating a ceramic substrate (e.g., alumina substrate) provides advantages such as thermal matching compatibility for certain materials (Col. 4, line 55 to Col. 5, line 12). Since Lee does not specify any particular type of substrate, it would have been obvious to one of ordinary skill in the art to modify Lee by

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specifically incorporating an alumina (ceramic) substrate because Koste teaches that such a substrate provides thermal matching compatibility for certain materials.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Steele** (US 6,780,672 B2) in view of **Matsuo** (4,703,339).

*Regarding Claim 30:*

Steele anticipates the package in claim 22 but **lacks** specifying a material for the heat sink. Matsuo **teaches** it was well known in the art to utilize a copper-tungsten alloy for a heat sink. Since Steele does not specify a material, it would have been obvious to one of ordinary skill in the art to modify Steele by specifically using a copper-tungsten alloy for the heat sink because Matsuo teaches that such a material was well known to be utilized for a heat sink.

***Allowable Subject Matter***

10. Claims 14-<sup>21</sup>~~19~~ and 23-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lex Malsawma whose telephone number is 571-272-1903.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lex Malsawma *LM*

February 7, 2005



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